4. For the Carbon.

The carbon of the charge has now alone to overcome oxidising action of the flame, and this is not only different different furnaces, but it exhibits differences for the furnace, which are dependent on the length of process, thickness of the layer of slag, and the greater or lesser i sity of boil of the bath. Therefore, the determination of i peroxide required for the elimination of carbon is only approximately possible. No matter, one can assume on the basis of empirical values for charges with high carbon content; and in rapid working furnaces with correctly carried oxvb working, that at the most one-fifth of the carbon content IB removed by means of the furnace action, whilst four-fifths or* somewhat more, are able to be eliminated by means of tbo oxygen of ore. Thus of 1 per cent. C about 0*2 per cent, wotilci be removed through the oxidising action of the flame, axid 0*8 per cent, by means of iron peroxide.

From 1 per cent. C there would be developed, according to p. 205, 0*5 per cent slag with 0'05 per cent. Pe. This O05 IPe, corresponding to 0-0645 per cent. FeO, must be produced from iron peroxide according to the formula Fe203+C=2FeO+"CO,

"I CC\

wherefrom 0-0645 X 0 „ ^0=0*07 per cent. Fe203 would 1><3

A X (A

required.

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By the reaction j^x(M)7=0-005 per cent. C would "be

removed.

Thus the removal of 1 per cent, carbon occurs in such W£BO that it may be allocated as under :—

0*200 per cent, through the oxidising action of the flame. 0-005 „ „

reduction of Pe203 to FeO.

0-795 „ ,, reduction of Fe20s to Fe.

I'OOO per cent.

The iron peroxide required for the last-named reaction amounts according to the equation * Fe203+3C=2Fe+3CO to 0-795 X=8'58 per cent.